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Glenn Safety Manual – Chapter 33

Job Hazard Analysis

Approved by: QS/Chief, Safety and Health Division

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Change Record

Rev.	Effective Date	Expiration Date	GRC25, Change Request #	Description
B	6/4/2012	5/14/2017	86	Bi-annual review/revision
Change 1	6/4/2012	5/14/2017	N/A	Administrative changes to add front cover and change history log to comply with NPR 1400.1. Added "GRC shall follow the requirements of" in Section 6.0 Requirements.
Change 2	9/30/2015	5/14/2017	N/A	Administrative change to remove hyperlinks.
C	12/15/2016	12/15/2021	16-014	Clarified job hazard analysis training requirements, roles, and responsibilities. Added information on workplace hazard assessments and tie-in to GSM Chapter 15 - Personal Protective Equipment Overall chapter update (e.g., Measurement/verification boxes replaced with one policy statement; records checked).

***Include all information for each revision. Do not remove old revision data. Add new rows to table when space runs out by pressing the tab key in the last row, far right column.*

Contents

Chapter 33—Job Hazard Analysis

Note: *The current version of this chapter is maintained and approved by the Safety and Health Division (SHeD). The last revision date of this chapter was December 2016. The current version is located on the Glenn Research Center intranet within the BMS Library. Approved by the Chief of Safety and Health Division.*

1.0 PURPOSE

This chapter establishes procedures and practices for conducting Job Hazard Analysis (JHA) at the Glenn Research Center (GRC) Lewis Field and Plum Brook Station (PBS).

2.0 APPLICABILITY

The GRC JHA process is applicable to all civil servant, support service contractor (SSC), and contractor employees assigned to GRC sites and to any NASA-controlled, Government-owned facilities associated with GRC. It applies to any Center work activity or task that could potentially cause an accident, injury, or illness. See section 6.1 of this chapter for further specifics on when a JHA is required to be developed.

In this chapter, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes expected outcome, and "are" or "is" denotes descriptive material

3.0 BACKGROUND

Every job or task an employee performs exposes that employee to potential hazards that could result in accidents, injuries, or illnesses. Employees can reduce the likelihood of an accident, injury, or illness by eliminating or minimizing their exposure to these potential hazards.

JHA's help employees and supervisors identify the hazards associated with Center activities and tasks, assess the risk associated with these hazards, and control that risk to an acceptable level.

The overall goals of the JHA program are to prevent injuries and illnesses, reduce property damage, supplement existing safety requirements, and enhance employee training on new, existing, and modified tasks.

4.0 POLICY

This document describes JHA's at GRC. It describes the responsibilities of personnel who perform, use, and review JHA's and identifies the training recommended and required for all GRC operations involving JHA's. Adherence to this document helps ensure compliance with Glenn Safety Manual, Chapter 1, Safety and Health Management, Section 5 (a)(1) of the Occupational Safety and Health Administration (OSHA) General Duty Clause, and Hazard Assessment and Equipment Selection (*OSHA 29 Code of Federal Regulations (CFR) 1910.132*(*d*).

4.1 Measurement/Verification

Compliance with the responsibilities and requirements of this chapter are measured and verified through the use of programmatic self-assessments, regulatory, and Agency audits and internal field inspections and surveys.

5.0 RESPONSIBILITIES

5.1 Supervisors

(Note: Supervisors can also refer to Work Leads, Area Leads, Foreman, or whoever is assigning a job/task.)

GRC supervisors (including contractors) are responsible for:

- Ensuring the JHA is completed and certified with the Supervisors' signature.
- Identifying and prioritizing activities and tasks within their area of responsibility for which JHAs should be developed (e.g. develop JHA's first for those tasks with the highest probability of death and severe injury).
- Ensuring JHA's are developed, with/ by the participation of affected employees, for each applicable activity or task
- Reviewing JHA's with affected personnel prior to assigned task being performed
- Continually ensuring that hazard controls documented in the JHAs are functional and being used properly
- Annually reviewing and/or updating applicable JHA's with affected employees
- Revising existing and/or approved JHA's when any changes occur in the basic steps, hazards, or hazard controls
- Reviewing pertinent JHA's after an incident or close call is reported and updating them, as needed, to prevent a reoccurrence
- Evaluating the need for a JHA (where none exists) if an incident or close call is reported
- Seeking assistance from SHeD, as needed, in completing JHA's
- Support employees in their organization in attending GRC General JHA training.
- Completing the recommended GRC General JHA training (GRC-4R1954) through SATERN
- When applicable, use the collective JHA's of a workplace for establishing general controls (PPE, signage and barricades) for all personnel entering the workplace, including visitors.

5.2 Personnel

All personnel who work on the GRC premises and/or on GRC funded tasks and will be required to use PPE during the completion of their duties are responsible for the following:

- Participating in the development, population, and maintenance of a JHA for their task(s)
- Completing GRC General JHA training through SATERN (recommended)
- Adhering to the documented controls listed in the JHA written for their task(s)
- Being vigilant of potential hazards not identified in the JHA and then notifying a supervisor

5.3 Safety and Health Division (SHeD)

SHeD is responsible for:

- Assisting GRC organizations with JHA development
- Providing GRC General JHA training (Personal Protective Awareness (PPE) Training/Job Hazard Analysis (JHA) Training (GRC-4R1954)
- Maintaining and updating the GRC JHA process, as necessary
- Assisting GRC organizations with industrial hygiene or safety issues that arise during the JHA process
- Periodically verifying employee, contractor, and visitor adherence to the policy and requirements of this chapter.

6.0 REQUIREMENTS

6.1 JHA Process

(Section 5 (a)(1) of the OSHA General Duty Clause)

6.1.1 When a JHA is required

- Job or task has resulted in multiple close calls, accidents, injuries, or illnesses
- Job or task has the potential to cause severe or disabling injuries or illness, even if there has previously been no accident, injury, or illness
- Job or task could lead to severe accident or injury from one simple human error
- Job or task involves hazardous materials
- Job or task involves hazardous energy sources
- Job or task involves the use of personal protective equipment (PPE)
- Job or task is new or has undergone changes in the process or procedures
- Job or task is complex enough to require written instructions

6.1.2 Employee Participation

The supervisor shall involve employees that work in the area or are familiar with the task being assessed with the JHA process. Employees understand the activities and tasks they perform and are essential in identifying potential hazards. They are also helpful in identifying control measures to minimize or eliminate these hazards.

6.1.3 Preliminary Job Review

Supervisors and employees shall review the work tasks performed by the organization to determine if any meet the criteria listed in Section 6.1.1. If any of the criteria are met, a JHA shall be developed for that task.

6.1.4 Task Observation or Review

The supervisor and employees shall observe the work task to understand how it is performed and consider task specific job hazardous training at this time. Sometimes it is helpful to photograph or videotape the task. If the task does not yet exist, the supervisor and employees shall at least discuss the work task to determine how it might be performed.

6.1.5 Documentation of Basic Steps

After observing or reviewing the task, the supervisor and employees shall identify the basic steps of the task. Include enough information to evaluate the hazards associated with each step without getting overly detailed. The more people who review the task and the basic steps, the more complete the evaluation will be. The GRC-239 form is the recommended form to record information.

6.1.6 Hazard Identification and Evaluation

The supervisor and employees shall review each step and identify potential hazards, both unsafe acts and unsafe conditions. A list of common hazards is available in Appendix A of this chapter and in OSHA Publication 3071, "Job Hazard Analysis."

Note: *The focus of the JHA process is on identifying unsafe acts, hazards, and conditions and controlling them to prevent or minimize accidents, injuries, illness, or property damage. This evaluation should not overly criticize the individual performing the task. During this exercise, ask questions like:*

- What can go wrong?
- What are the consequences?
- How could it happen?

- What are other contributing factors?
- How likely is it that the hazard will occur?
- What control measures, if any, are currently in place?

6.1.7 Hazard Controls

Once the hazards for each step are identified, the supervisor and employees shall identify existing or potential control measures that will eliminate or minimize the hazards. Control measures include engineering controls, administrative controls, and/or specific PPE, in this order of preference. Examples of control measures are available in Appendix C of this chapter and in OSHA Publication 3071, "Job Hazard Analysis." Consult Chapter 15 (PPE) in the Glenn Research Center Safety Manual for further details regarding specific PPE and proper usage.

6.1.8 Review and Submit JHA

The supervisor or employee may choose to submit the JHA to the SHeD for additional review and comment. Once all issues are resolved, the supervisor and/or assigned safety professional/delegate shall review the final JHA with the affected employees in the organization.

6.2 JHA Format and Content

GRC form GRC-239 is the suggested JHA format to use. An equivalent form may be used but it shall contain the following information as a minimum to meet OSHA's workplace hazard assessment requirement (OSHA 29 CFR 1910.132(d)).

- Job/Task description
- Workplace hazard assessment (building, room, and/or area)
- Who filled out or populated the JHA (Analyst(s))
- Other employees involved with the Job/Task
- Description of job/tasks steps (with focus on those where hazards are present).
- Description of the hazards present in each step
- Hazard controls and the specific PPE to be utilized
- Supervisor's or other qualified individual's signature certifying the JHA as a hazard assessment document.

6.3 Change Control

Should any changes occur that involve the basic steps in JHA, the employee and supervisor shall update that JHA in accordance with Section 6.1 and 6.2 of this chapter.

In addition, the responsible supervisor shall conduct an annual review of work tasks and existing JHAs to determine if a new JHA is needed or if an existing JHA needs to be revised.

The supervisor shall review a JHA if a task-related close call, accident, injury, or illness occurs. The JHA shall be revised appropriately based on the results of the review.

6.4 Training

It is recommended that anyone who participates in JHA development, review, approval, or maintenance complete the PPE Awareness/JHA training course (GRC-4R1954). The GRC PPE Awareness/JHA training will cover the contents of this chapter and how to adequately develop a JHA.

SHeD provides JHA training along with the Personal Protective Equipment (PPE) Awareness Training (GRC-4R1954). Attendance and completion of the course will be documented in the System for Administration, Training, and Educational Resources for NASA (SATERN) by the Human Capital Development Division (HCDD).

7.0 RECORDS

- Job Hazard Analysis Forms — Maintained by the organization that populated the JHA
- GRC General PPE Awareness and Job Hazard Analysis Training and Attendance Records — Maintained by HCDD

8.0 REFERENCES

Document Number	Document Name
OSHA Publication 3071	Job Hazard Analysis
GLM–QS–1700.1	Glenn Safety Manual, Chapter 1, Safety and Health Management
Occupational Safety and Health Act of 1970	OSHA General Duty Clause
OSHA 29 CFR 1910.132(d)	Hazard Assessments and Equipment Selection

APPENDIX A.—DEFINITIONS AND ACRONYMS

Corrective and preventive action reporting (CPAR)

Glenn Research Center (GRC)

Glenn Safety Manual (GSM)

Job Hazard Analysis (JHA)

Occupational Safety and Health Administration (OSHA)

Organization Development and Training (OD&T)

Personal protective equipment (PPE)

Plum Brook Station (PBS)

Safety and Health Division (SHeD)

Shall.—Indicates a requirement that is necessary to meet the standards of protection currently in effect

Should.—Indicates a recommendation that can be applicable

System for Administration, Training, and Educational Resources for NASA (SATERN)

APPENDIX B.—COMMON HAZARDS

Below is a list of common workplace hazards.

Note: This is not an all-inclusive list.

Caught in, on, or between

Chemical.—toxic, flammable, combustible, corrosive, reactive

Collision.—struck by or against

Contact with

Electrical.—Shock, short circuit, fire, static, electrostatic discharge, loss of power

Ergonomics.—Strain, human error, repetitive motion, perception

Excavation.—Collapse, contact with underground structures and/or utilities

Explosion.—Overpressurization

Falls.—To same level, to different level, slips and/or trips

Fire.—Fuel, oxidizer, ignition source

Kinetic energy.—Linear, rotary

Mechanical.—Vibration, failure, stored potential energy

Noise.—Continuous, impact

Pathological.—Disease, bacteria, microorganisms

Radiation.—Ionizing, non-ionizing, electromagnetic, ultraviolet, infrared, visible

Temperature extreme.—Heat, heat stress, hypothermia, cold, cryogenics

Weather.—Snow, rain, wind, ice, lightning, tornado, flood

APPENDIX C.—HAZARDS CONTROL MEASURES

The following are general hazard control measures. They are listed from most to least preferred.

Note: This is not an inclusive list.

Engineering controls
Eliminate or minimize the hazard through design
Enclose the hazard or the personnel
Isolate the hazard with guards, interlocks, and barriers

Administrative controls
Written operating procedures, work permits, and safe work practices
Exposure time limitations
Alarms, signs, and warnings
Buddy system
Training

Personal protective equipment
Respirators
Hearing protection
Gloves
Protective clothing/aprons/sleeves
Safety glasses
Faceshields
Hardhats
Safety shoes/boots